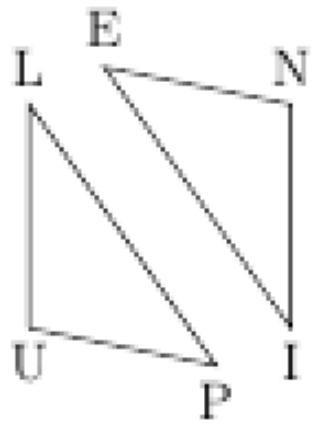
Topic: Triangle congruence with SSS, ASA, SAS

Question: Which theorem could you use to prove the triangles congruent?



The following facts are given about ΔLUP and ΔINE.

$$\overline{LU} \cong \overline{IN}$$

$$\angle P \cong \angle E$$

$$\overline{LP} \cong \overline{IE}$$

Answer choices:

A SSS

B SAS

C ASA

D None of these

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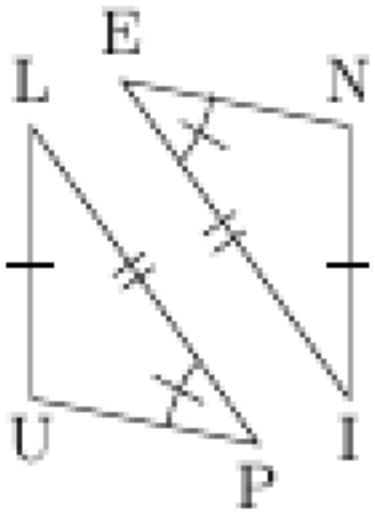
Solution: D

Because only two sides and one angle are given congruent, or can be proved congruent, you can rule out SSS and ASA.



Because the given pair of congruent angles are not included between the congruent sides, you can rule out SAS.

The triangles can't be proven congruent.

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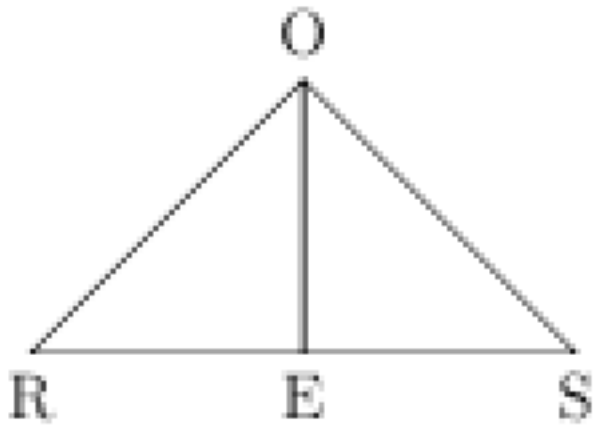

The following facts are given about ΔROE and ΔSOE.

$\overline{OE} \perp \overline{RS}$

$\angle ROE \cong \angle SOE$

Answer choices:

A SSS

B SAS

C ASA

D None of these

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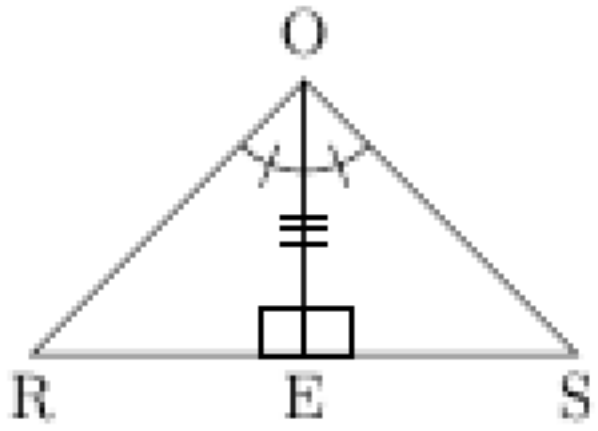
Solution: C

With the given information:



A: $\angle ROE \cong \angle SOE$

S: $\overline{OE} \cong \overline{OE}$ because of the reflexive property

A: $\overline{OE} \perp \overline{RS}$ so $\angle REO \cong \angle SEO$ because right angles are congruent.

This makes the triangles congruent by ASA.

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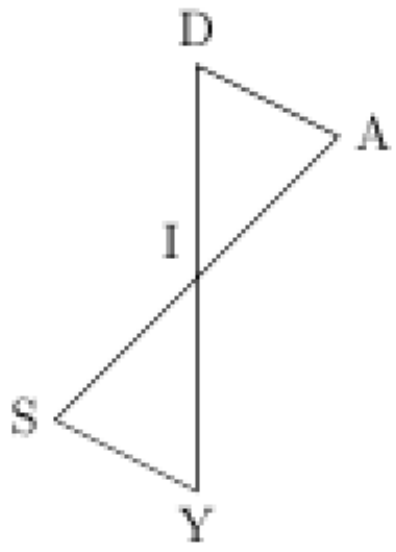

The following facts are given about ΔDAI and ΔYSI.

$\overline{DI} \cong \overline{YI}$

$\overline{AI} \cong \overline{SI}$

Answer choices:

A SSS

B SAS

C ASA

D None of these

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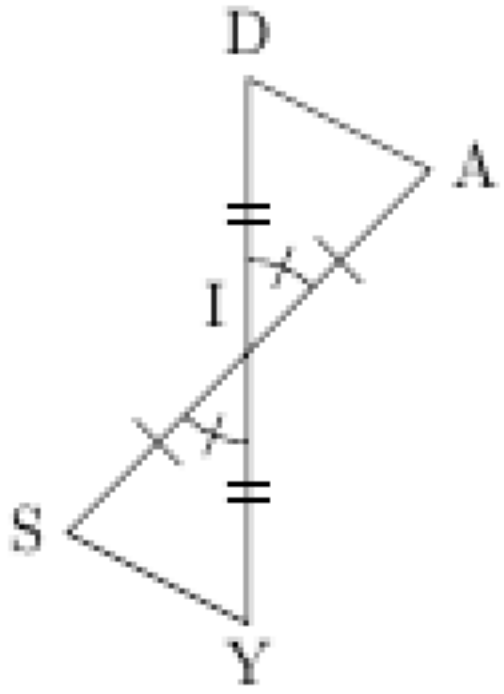
Solution: B

With the given information:



S: $\overline{DI} \cong \overline{YI}$

A: $\angle DIA \cong \angle YIS$ because vertical angles are congruent.

S: $\overline{AI} \cong \overline{SI}$

This makes the triangles congruent by SAS.

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